

SITE: Brown's Dump
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United States
Environmental Protection
Agency

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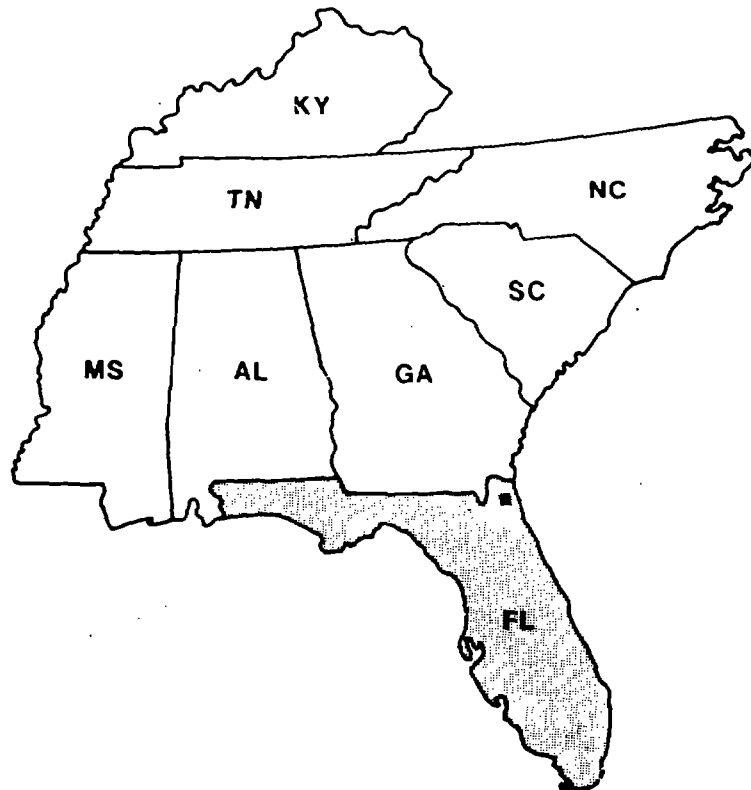
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December 1999

Research and Development

EPA

AERIAL PHOTOGRAPHIC ANALYSIS BROWN'S DUMP STUDY AREA Jacksonville, Florida

EPA Region 4



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December 1999

AERIAL PHOTOGRAPHIC ANALYSIS
BROWN'S DUMP STUDY AREA

Jacksonville, Florida

by

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Contract No. 68-C5-0065

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LAS VEGAS, NEVADA 89193-3478

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ABSTRACT

This report presents findings from analysis of historical photographs of the Brown's Dump study area located in Jacksonville, Duval County, Florida. The analysis focused on the central portion of the study area, identified as the site (approximately 36 hectares [89 acres]). Black-and-white and color photographs spanning the years from 1943 to 1997 were used in the analysis. This analysis assists in determining the extent of Brown's Dump, also known as the ash dump, over the years. It also documents environmentally significant features at this Superfund site and provides operational remote sensing support to the U. S. Environmental Protection Agency Region 4 for field investigations.

Results of the photographic analysis reveal that from 1943 through 1956, the ash dump was present north and south of the railroad tracks. In the analysis years 1952 and 1956, the ash dump had decreased in size; dumping of possible waste material was also visible north and south of the railroad tracks. A school and residential area were under construction around the 1956 time period. By 1960, south of the railroad tracks, all of the areas of dumping no longer appeared active and were mostly overgrown with vegetation. During the period from 1960 through 1997, most of the former dump areas south of the railroad tracks became residential developments. However, the area between the substation and the school, which was shown in the 1943 photo as part of the dump, was still undeveloped in 1997. North of the railroad, some dumping was apparent in 1943 and was visible to varying extent up through 1966. In 1973 it was identified as a junkyard and by 1997 this area was primarily wooded. Over the years of analysis, the land usage in the study area changed from agricultural to primarily residential. In the northeast portion of the study area from 1956 through 1997, an extraction area and possible fill facility were developed; open dumping was observed along the northwest edge of this facility. In the remaining portion of the study area around the site, few to no environmentally significant features were observed.

The U.S. Environmental Protection Agency (EPA), Environmental Sciences Division, Landscape Ecology Branch in Las Vegas, Nevada, prepared this report for the EPA Region 4 Hazardous Waste Management Division in Atlanta, Georgia, and the EPA Office of Emergency and Remedial Response in Washington, D.C.

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INTRODUCTION

This report presents findings from an analysis of historical aerial photographs of the Brown's Dump study area (CERCLIS ID# FLD980847016) located in Jacksonville in Duval County, Florida (Figures 1 and 2). The study area is approximately 1.2 kilometers (0.8 miles) west of Interstate 95 and approximately 0.7 kilometers (0.4 miles) north of U.S. Route 1. This photographic analysis spans a period of 55 years and includes 10 selected dates of photographs from 1943, 1945, 1952, 1956, 1960, 1966, 1973, 1982, 1988, and 1997.

The Brown's Dump site received municipal incinerator ash and possible municipal trash for a period of time (EPA 1999). It was primarily known as the ash dump. Currently the historical extent of the ash dump is unknown (EPA 1999). Thus, this analysis identifies the extent of the dump on the photographs examined. This analysis also documents environmentally significant features and provides operational remote sensing support to field investigations in U.S. Environmental Protection Agency (EPA) Region 4 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Two boundaries are incorporated in the analysis; one represents the site and the second represents the study area which is about a mile from side to side. Results of the photographic analysis reveal that, from 1943 to 1956, the reported ash dump was visible north and south of the railroad tracks. In 1956 the extent of the ash dump had decreased in size. Dumping of possible waste material created large disposal areas north and south of the railroad tracks. A school and a residential area around the school were under construction within the site at this time. From 1960 to 1997 the site was further developed for residential purposes. Over the years, features observed on and outside of the site included possible seepage; probable stains; ground scars; light, medium, and dark-toned materials; smoke plumes; mounded materials; fill; disturbed ground; standing liquid; cleared areas; and an earth-covered bunker.

Over the years of analysis, the land usage in the study area changed from agriculture to primarily residential. In the northeast portion of the study area an extraction area and possible fill facility were developed from 1956 through 1997; open dumping was observed along the northwest edge of this facility. In the remaining portion of the study area around the site, few to no environmentally significant features were observed. The greatest extent (for any year examined) of the ash dump and any possible waste disposal area (WDA) are shown on the 1997 photograph (Figure 12).

A Glossary, defining features or conditions identified in this report, follows the Photographic Analysis section. Sources for all maps, aerial photographs, and collateral data used in the production of this report are listed in the References section. A list of all aerial photographs that were identified and evaluated for potential application to this study can be obtained by contacting the EPA Work Assignment Manager. Historical aerial photographs used in the analysis of this site have been digitally scanned and printed for use in this report. A transparent overlay with interpretative data is affixed to each of the digital prints. See the Methodology section for a discussion of the scanning and printing procedures.

The U.S. Environmental Protection Agency (EPA), Environmental Sciences Division, Landscape Ecology Branch in Las Vegas, Nevada, prepared this report for the EPA Region 4 Hazardous Waste Management Division in Atlanta, Georgia, and the EPA Office of Emergency and Remedial Response in Washington, D.C.

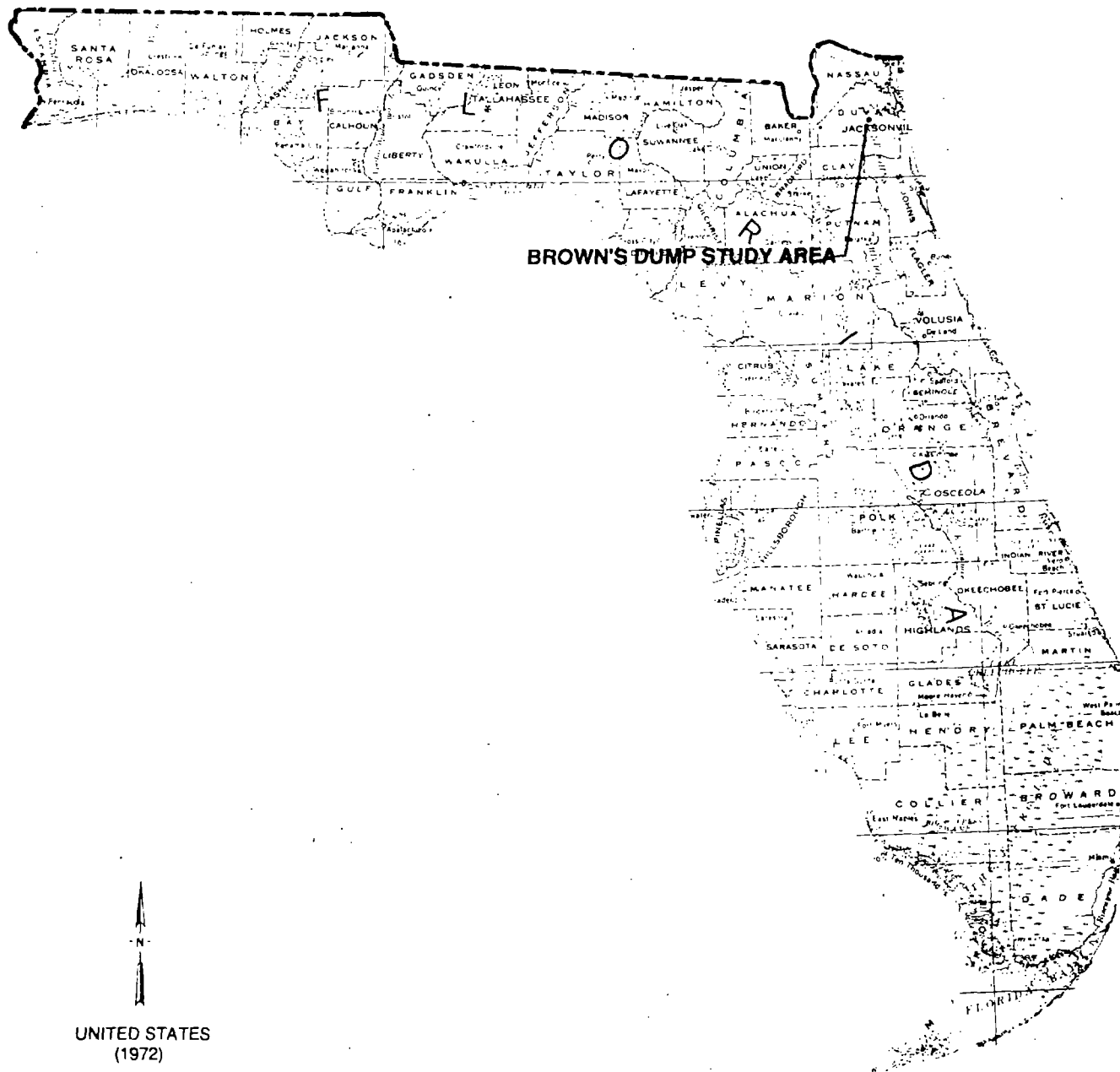


Figure 1. Study area location map, Florida (USGS 1972). Approximate scale 1:3,350,000.

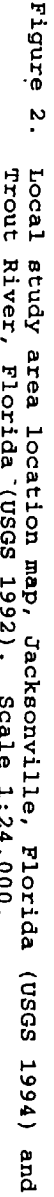


Figure 2. Local study area location map, Jacksonville, Florida (USGS 1994) and Trout River, Florida (USGS 1992). Scale 1:24,000.

METHODOLOGY

This report was prepared using a standard methodology that includes the following steps:

- data identification and acquisition,
- photographic analysis and interpretation, and
- graphics and text preparation.

These steps are described below. Subsections also address details related to specific kinds of analyses that may be required to identify environmental features such as surface drainage and wetlands. All operational steps and processes used to perform this work (including data identification and acquisition, photographic analysis and interpretation, and graphics and text preparation) adhere to strict QA/QC guidelines and standard operating procedures (SOPs). These guidelines and procedures are documented in the Master Quality Assurance Project Plan (QAPP) prepared for Remote Sensing Technical Support Contract No. 68-C5-0065 (LESAT 1999).

Data identification and acquisition included a search of government and commercial sources of historical aerial film for the study area. Photographs with optimal spatial and temporal resolution and image quality were identified for acquisition. In addition, U.S. Geological Survey (USGS) topographic maps were obtained to show the study area location and to provide geographic and topographic context.

To conduct this analysis, the analyst examined diapositives (transparencies) of historical aerial photographs showing the study area. Diapositives are most often used for analysis instead of prints because the diapositives have superior photographic resolution. They show minute details of significant environmental features that may not be discernible on a paper print.

A photographic analyst uses a stereoscope to view adjacent, overlapping pairs of diapositives on a backlit light table. In most cases, the stereoscope

is capable of various magnifications up to 60 power. Stereoscopic viewing involves using the principle of parallax (observing a feature from slightly different positions) to observe a three-dimensional representation of the area of interest. The stereoscope enhances the photo interpretation process by allowing the analyst to observe vertical as well as horizontal spatial relationships of natural and cultural features.

The process of photographic analysis involves the visual examination and comparison of many components of the photographic image. These components include shadow, tone, color, texture, shape, size, pattern, and landscape context of individual elements of a photograph. The photo analyst identifies objects, features, and "signatures" associated with specific environmental conditions or events. The term "signature" refers to a combination of components or characteristics that indicate a specific object, condition, or pattern of environmental significance. The academic and professional training, photo interpretation experience gained through repetitive observations of similar features or activities, and deductive logic of the analyst as well as background information from collateral sources (e.g., site maps, geologic reports, soil surveys) are critical factors employed in the photographic analysis.

The analyst records the results of the analysis by using a standard set of annotations and terminology to identify objects and features observed on the diapositives. Significant findings are annotated on overlays attached to the photographic or computer-reproduced prints in the report and discussed in the accompanying text. Annotations that are self-explanatory may not be discussed in the text. The annotations are defined in the legend that accompanies each print and in the text when first used.

Objects and features are identified in the graphics and text according to the analyst's degree of confidence in the evidence. A distinction is made between certain, probable, and possible identifications. When the analyst believes the identification is unmistakable (certain), no qualifier is used. Probable is used when a limited number of discernible characteristics allow the analyst to be reasonably sure of a particular identification. Possible is used when only a few characteristics are discernible, and the analyst can only infer an identification.

The prints in this report have been reproduced, either by photographic or computer methods, from the original film. Reproductions are made from the original film and may be either contact (the same size) prints or enlargements, depending on the scale of the original film. Any computer-produced prints used in this report are generated from scans of the film at approximately 1,300 dots per inch (dpi) and printed at 720 dpi. Although the reproductions allow effective display of the interpretive annotations, they may have less photographic resolution than the original film. Therefore, some of the objects and features identified in the original image and described in the text may not be as clearly discernible on the prints in this report.

Study area boundaries shown in this report were determined from aerial photographs or collateral data and do not denote legal property lines or ownership.

Surface Drainage

The surface drainage analysis produced for this report identifies the direction and potential path that a liquid spill or surface runoff would follow based on the topography of the terrain and the presence of discernible obstacles to surface flow. The analyst determines the direction of surface drainage by stereoscopic analysis of the aerial photographs and by examining USGS topographic maps. Site-specific surface drainage patterns are annotated on the map or photo overlay. Where the direction of subtle drainage cannot be determined, an indeterminate drainage line symbol is used. Regional surface flow is ascertained from the USGS topographic maps.

PHOTOGRAPHIC ANALYSIS

This aerial photographic analysis covers the years 1943, 1945, 1952, 1956, 1960, 1966, 1973, 1982, 1988, and 1997 for the Brown's Dump study area located in Jacksonville in Duval County, Florida. The names of some features identified in this analysis were derived from collateral data (EPA 1999) and are identified with an asterisk (*) on the photograph overlays. Two boundaries are incorporated in the analysis; one represents the site and the second represents the study area which is about a mile from side to side. The discussion of the site addresses the northern and the southern portions of the ash dump. Railroad tracks trending east and west separate the northern and southern ash dump sites. Features off of the site, but located within the study area, are identified as being in the study area.

Environmentally significant features, conditions, and changes are discussed by photographic year. If a feature is not extant or no change has occurred since the last photographic date, the feature is annotated but no discussion is provided in the text. Should new activity be observed on a later photograph, the features or conditions are again discussed. Features located outside the site but within the study area are annotated, but are only discussed if they are environmentally significant.

Surface drainage in the study area flows into low-lying areas and into Moncrief Creek, which flows northeast and drains into Trout River.

JUNE 6, 1943 (FIGURE 3)

Due to poor film resolution for this analysis year, features could not be determined with certainty. The ash dump has already been developed by this time and is primarily situated south of the railroad tracks and extends somewhat north of the railroad tracks.

Northern Portion

In the northern portion of the ash dump, a smoke plume prevents a clear view of the western edge of the ash dump. Possible seepage (Seepage-1) is observed nearby.

Southern Portion

In the southern portion of the ash dump located south of the railroad tracks, a possible truck is observed. Medium-toned material (MTM) is noted on the west face of the ash dump. Just south of the ash dump is a large possible moist area. A light-toned mound of material (LTMM) is visible in the northern portion of the possible moist area. Disturbed ground (DG-1) is visible to the southwest. The southern portion of the site is largely made up of farmsteads.

Surrounding Study Area

In the northeastern portion of the study area is a golf course. In an area just to the southeast of the ash dump is a ground scar (GS-1) and a probable stain (ST-1). The southwestern portion of the study area contains some residences, but is mainly farmstead. The northwestern portion is composed of farmsteads.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
←	DRAINAGE
←	FLOW
x x x x x	FENCE
==	VEHICLE ACCESS
+	RAILWAY
⬢	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 3. Brown's Dump study area, June 6, 1943. Approximate scale 1:8,570.

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MARCH 29, 1945 (FIGURE 4)

The ash dump appears to have increased in size due to additional dumping on both sides of the railroad tracks.

Northern Portion

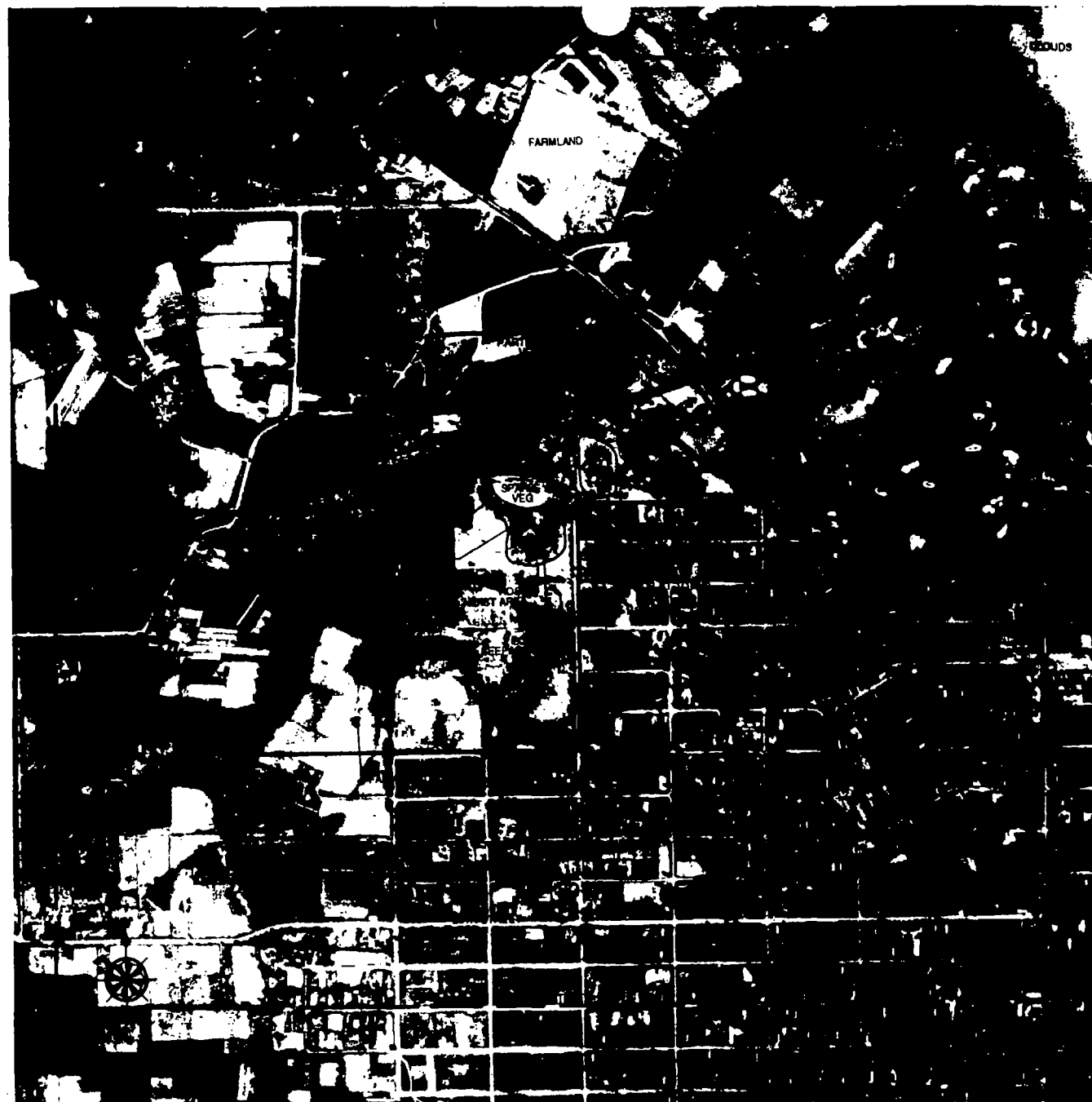
North of the railroad tracks, the possible seepage (Seepage-1) observed in 1943 is no longer visible. Near the west face of the northern portion of the ash dump is a possible area of standing liquid (SL-1). The western portion of the dump appears to be partially covered with vegetation.

Southern Portion

South of the railroad track, an access road is noted on the southern portion of the ash dump. A portion of the ash dump north of the access road is partially covered with vegetation, where as the southern portion of the dump south of the road is sparsely vegetated. East of the ash dump is a large area of possible dumping and spreading of waste material. On the west side of the dump, the medium-toned material noted in 1943 is no longer visible. Near the south face of the ash dump, and within the possible moist area, is an area of possible seepage (Seepage-2). The light-toned mound of material noted in 1943 in the possible moist area is no longer visible. Slightly to the northwest, is an area of dark-toned mounded material (DTMM). The disturbed ground (DG-1) noted in 1943 southwest of the possible moist area has been revegetated.

Surrounding Study Area

Within the study area, but east of the site in the residential area, the ground scar GS-1 and the probable stain ST-1 noted in 1943 are no longer visible. A possible open dump is noted east of the previous GS-1 and ST-1 and west of Moncrief Road. The surrounding area appears unchanged.



INTERPRETATION CODE

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- - -	STUDY AREA
← - -	DRAINAGE
←	FLOW
x x x x x	FENCE
= = = =	VEHICLE ACCESS
+ + + +	RAILWAY
⊕	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 4. Brown's Dump study area, March 29, 1945. Approximate scale 1:8,570.

JANUARY 3, 1952 (FIGURE 5)

Northern Portion

In the portion of the ash dump north of the railroad tracks, near the west face of the ash dump, the possible area of standing liquid (SL-2) observed in 1945 is no longer visible.

Southern Portion

The portion of the ash dump located south of the railroad tracks in 1945 appears to be slightly reduced in size. However, additional dumping is present just west of this area along the railroad tracks. East of the dump, the area of possible dumping and spreading of waste material is partially covered by vegetation. Vehicles are noted nearby. South of the ash dump, the possible moist area and the dark-toned mound of material noted in 1945 are no longer visible. This area is heavily ground scarred (GS-2). Within the ground scar GS-2 area and west of Pearce Street, there are numerous piles of fill (FL-1) and along the west side of the fill is a possible ditch. In the center of the site, there are additional piles of fill (FL-2) and along the east side is a ditch. Just north of fill FL-2 is disturbed ground (DG-2). The southern portion of the site remains farmstead.

Surrounding Study Area

East of the ash dump and west of Moncrief Road, the possible open dump observed in 1945 is no longer visible. In the northeast, the golf course is still present. In the southeast portion of the study area, the residential area has expanded. In the southwestern portion of the study area, the residential area has expanded; however, the area still consists of some farmsteads. To the northwest an increase in residential development is apparent; however, some farmsteads are present.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
←	DRAINAGE
→	FLOW
x x x x x	FENCE
= = = =	VEHICLE ACCESS
+ + + +	RAILWAY
⬢	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 5. Brown's Dump study area, January 3, 1952. Approximate scale 1:8,570.

NOVEMBER 9, 1956 (FIGURE 6)

Northern Portion

The ash dump north of the railroad tracks is completely revegetated. North of Moncrief Creek, a large possible waste disposal area (WDA-1), buildings, probable equipment, and standing liquid (SL-2) are noted.

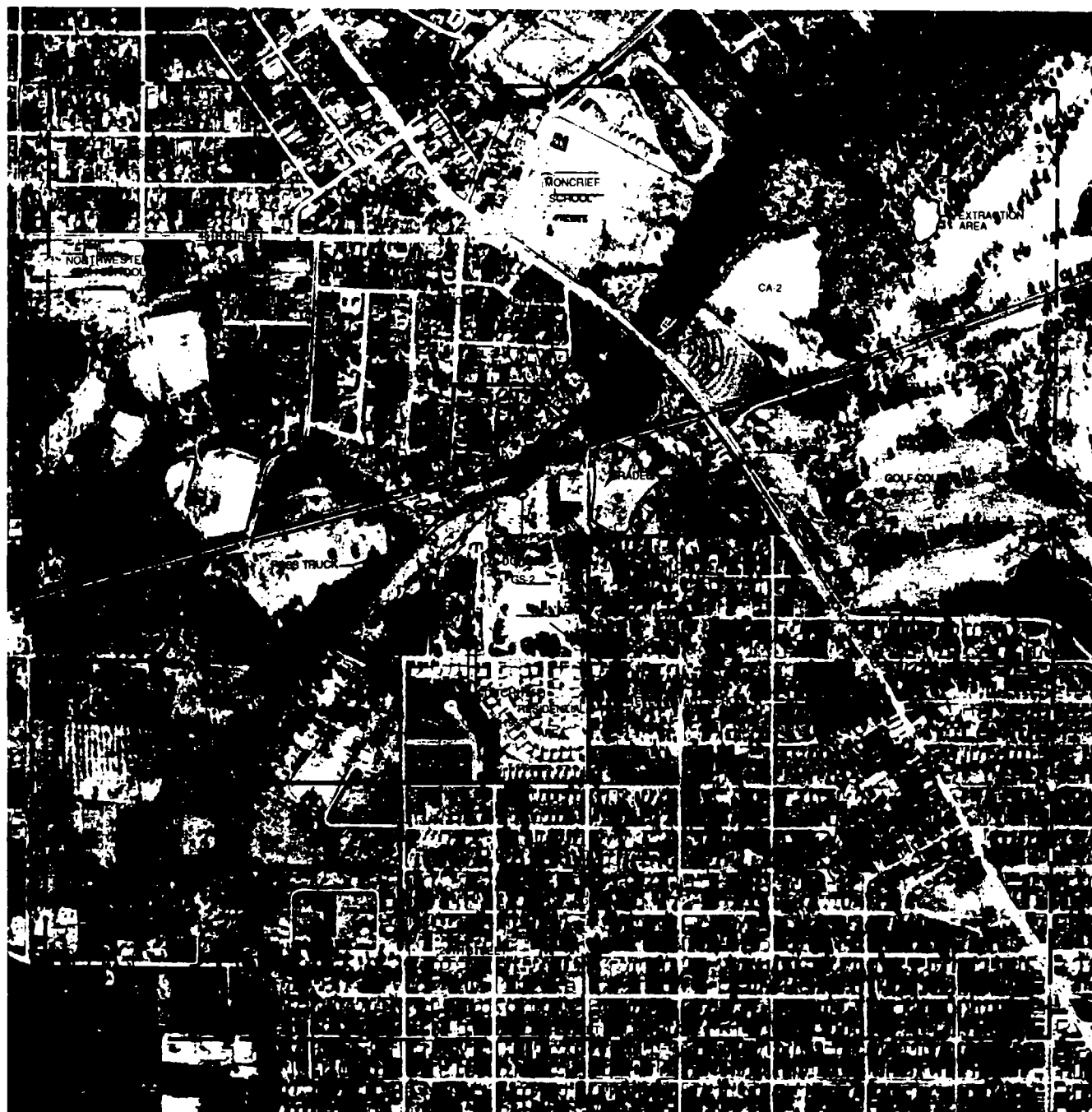
Southern Portion

In the southern ash dump located south of the railroad tracks, it appears that a majority of the ash dump is no longer present, leaving only a small portion visible. A power substation has been constructed where the major portion of the ash dump was previously located. To the east is a cleared area (CA-1) which appears to have been graded. To the west of the remaining portion of the ash dump site is a small area of possible standing liquid (SL-3). Continuing west, north of Moncrief Creek and south of the railroad tracks, the new dump area in 1952 has expanded in size and is now identified as a possible waste disposal area (WDA-2). Three vehicles, a stain (ST-2), and a smoke plume are noted in this area. Access roads connect this area to possible waste disposal area WDA-1 located to the north of the railroad tracks and to the remaining ash dump in the south. A third possible waste disposal area (WDA-3) is observed south of Moncrief Creek. Within possible waste disposal area WDA-3 is a possible truck and a possible area of standing liquid (SL-4).

South of the remaining ash dump, Mary McLead Bethune Elementary school is under construction. Ground scars (GS-2) are visible throughout the area. West of Pearce Street, and north of West 30th street, the piles of fill FL-1 and possible ditch alongside and fill FL-2 and its ditch, both observed in 1952, are no longer visible. The disturbed ground, located north of fill FL-2 in 1952, has been graded. In the southern portion of the site, residential development is evident.

Surrounding Study Area

Off site and to the northeast near the edge of a golf course is a large cleared area (CA-2) and further to the northeast is an extraction area. In the southeast, the residential area continues to develop. In the southwestern area, the development of residential areas (not annotated) continues; however, this area is still largely made up of farmsteads. To the northwest, development of the residential area (not annotated) is apparent and a school is under construction.



INTERPRETATION CODE

————	SITE BOUNDARY
- - - -	STUDY AREA
← - - -	DRAINAGE
← - - -	FLOW
x x x x x	FENCE
= = = =	VEHICLE ACCESS
+ + + +	RAILWAY
⬡	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 6. Brown's Dump study area, November 9, 1956. Approximate scale 1:8,560.

NOVEMBER 3, 1960 (FIGURE 7)

The remaining ash dump located south of the substation is no longer present and the area is now partially revegetated. The site has also had an increase in residential development, with apartment complexes in the eastern portion of the site and additional single family housing in the southern portion of the site.

Northern Portion

North of the railroad tracks, the southwestern portion of possible waste disposal area WDA-1 appears to be inactive. A possible business (not annotated) has been constructed in the area. The northern portion of possible waste disposal area WDA-1 and several buildings remain. The probable equipment and standing liquid SL-2 observed within the possible waste disposal area WDA-1 are no longer visible.

Southern Portion

In the primary ash dump site located south of the railroad tracks, it appears that the small remaining portion of the ash dump is no longer present. A ground scar (GS-3) is visible where the portion of the ash dump was located. Just to the east, an apartment complex has been developed in the cleared area CA-1 observed in 1956. Near the center of the complex is a ground scar (GS-4). Further east are piles of fill (FL-3).

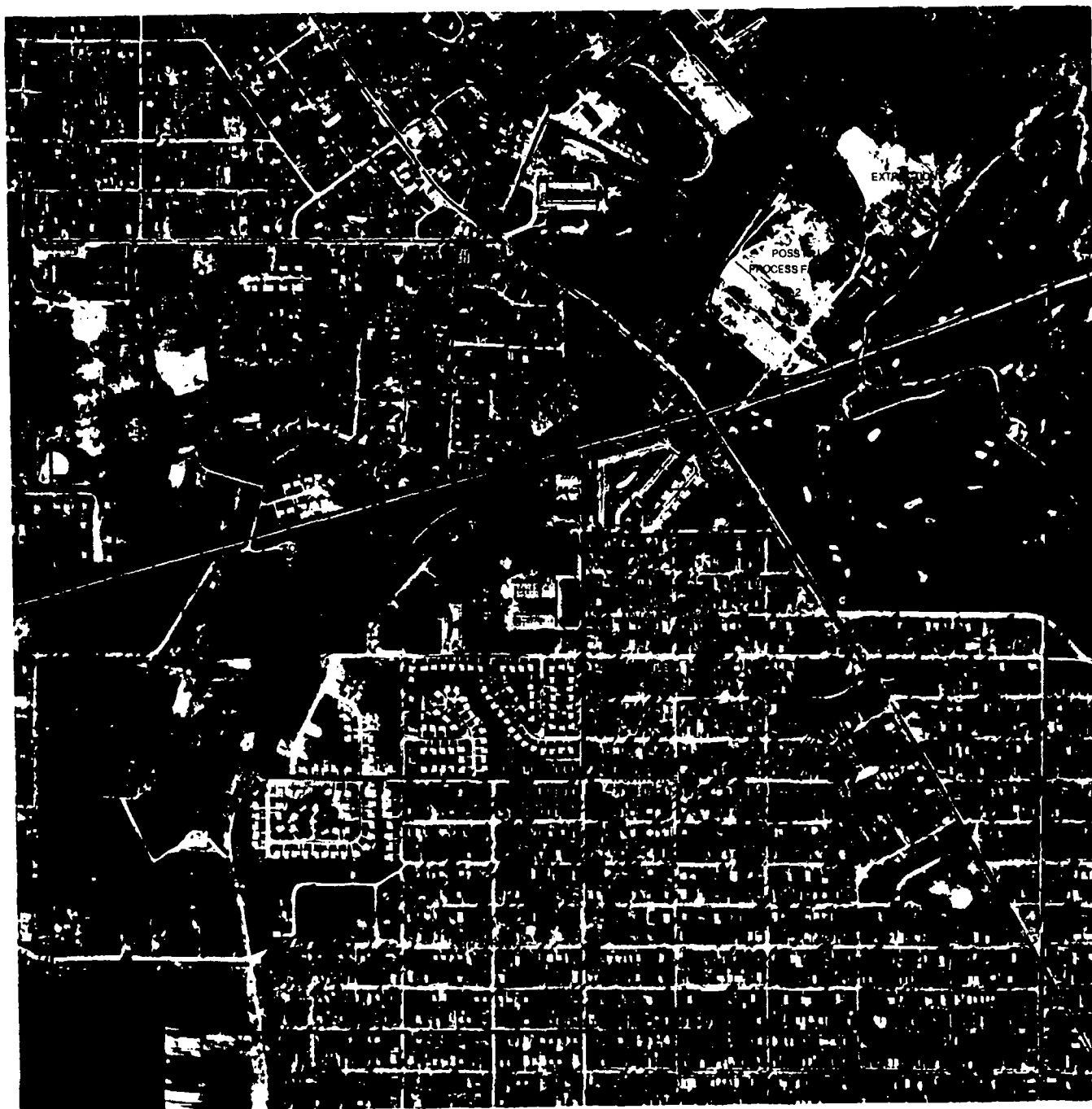
West of the substation, a small pit is observed with possible standing liquid (SL-5) inside. Nearby, the small area of possible standing liquid (SL-3) which was observed in 1956 is no longer visible. North of Moncrief Creek and south of the railroad tracks, the possible waste disposal area (WDA-2) observed in 1956 is no longer visible and is covered with vegetation. The third possible waste disposal area (WDA-3) observed south of Moncrief Creek is also no longer visible and is covered with vegetation. The possible area of standing liquid (SL-4) noted in 1956 in possible waste disposal area WDA-3 is no longer visible. A road is under construction in this area. At the northeastern end of this road is a small area of light-toned material (LTM). Nearby is a possible building foundation.

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The area west of Mary McLead Bethune Elementary School is still ground scarred (GS-2), although the scar is smaller in extent compared to 1956. Further west, a new building (NB) is under construction. South of 33rd Street are residential areas. Further residential development is noted along Moncrief Creek.

Surrounding Study Area

Within the study area, but off the site to the northeast, the large cleared area CA-2 in 1956 has been developed into a possible fill process facility. Also, the extraction area has expanded and appears to be part of the possible fill process operation. The southeast appears to be mostly unchanged. In the southwest, the development of residential areas continues; however, this area is mainly farmstead. To the northwest, development of the residential area is noted and commercial areas (not annotated) are under construction; however, farmsteads still remain.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
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←	FLOW
x x x x x	FENCE
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+ + +	RAILWAY
⊗	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
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FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 7. Brown's Dump study area, November 3, 1960. Approximate scale 1:8,570.

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JANUARY 23, 1966 (FIGURE 8)

Northern Portion

North of the railroad tracks, possible waste disposal area WDA-1 and buildings remain. Vehicles are observed in the area and as well as discarded vehicles. East of the possible waste disposal area WDA-1, there appears to be an intentional thinning of a portion of the wooded area.

Southern Portion

South of the railroad tracks and south of the power substation, ground scar GS-3 observed in 1960 at the former location of a portion of the ash dump has revegetated. Just to the east in the apartment complex, dumping of possible municipal waste is noted just south of the railroad tracks. Near the center of the complex, ground scar GS-4 is still evident. Further east, the piles of fill (FL-3) observed in 1960 are no longer visible. A new apartment complex has been constructed in this area.

West of the power substation, due to a heavy vegetation canopy, the small pit containing standing liquid (SL-5) in 1960 is not discernible. Further west, the possible building foundation has now been developed into an earth-covered bunker (ECB). The road nearby, which was under construction in 1960, has been paved and the area is now residential. At the northeastern end of the road, the small area of light-toned material observed in 1960 is no longer visible.

At the Mary McLead Bethune Elementary School a new building (NB) has been constructed just to the north of the existing buildings. Ground scar GS-2 west of the school has expanded in size. South of 33rd Street, the residential area appears to be completed.

Surrounding Study Area

Off site, but within the study area to the northeast, a large ditch is visible along Moncrief Road near Moncrief Creek. Nearby, are two separate areas of fill (FL-4). The extraction area to the northeast is reduced in size

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and is now partially revegetated. The southeast portion of the study area appears unchanged. In the southwest, residential areas continue to develop. However, there is still farmstead area present. Within the southwest area and south of 26th Street is a ground scar (GS-6). Just to the north, along Moncrief Creek are piles of fill (FL-5). North of 33rd Street and along the railroad tracks is a possible Grain Process Facility with six possible silos. Another new facility to the west is a Probable Distribution Facility. The northwest part of the study area appears to be unchanged.



INTERPRETATION CODE

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- - -	STUDY AREA
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FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 8. Brown's Dump study area, January 23, 1966. Approximate scale 1:8,675.

7 2 0029

17 4 0630

JANUARY 16, 1973 (FIGURE 9)

Northern Portion

North of the railroad tracks, possible waste disposal area WDA-1 noted from 1956 to 1966 appears to have been converted into a probable junkyard. Discarded cars, and other debris are apparent and there is an increase in vegetation which may indicate a decrease in activity. East of the probable junkyard, the remaining trees in the portion of the wooded area observed in 1966 have been removed and this is now a cleared area (CA-3).

Southern Portion

South of the railroad tracks, in the apartment complex, the dumping of possible municipal waste noted in 1966 is no longer visible. Near the center of the complex, ground scar GS-4 is still present. West of the substation, the probable earth-covered bunker remains. The area west of Mary McLead Bethune Elementary School is still ground scarred (GS-2).

Surrounding Study Area

Within the study area, but off the site in the northeast, the large ditch observed in 1966 along Moncrief Road near Moncrief Creek is filled. Nearby, the separate areas of fill (FL-4) observed in 1966 appear to have been removed. To the south, a new apartment complex has been constructed. The extraction area noted in 1966 has been developed into a new residential area. In the southwest part of the study area, residential areas continue to develop. However, some development of industrial facilities is apparent along with rail spurs. Within the southwest area and south of 26th Street, ground scar GS-6 observed in 1966 has revegetated. Just to the north, along Moncrief Creek, the piles of fill (FL-5) are no longer visible. The northwest portion of the study area appears unchanged.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
←	DRAINAGE
→	FLOW
x x x x x	FENCE
= = = =	VEHICLE ACCESS
+ + + +	RAILWAY
⬢	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT.	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 9. Brown's Dump study area, January 16, 1973. Approximate scale 1:9,000.

17 4 0031

17 032

JANUARY 5, 1982 (FIGURE 10)

Northern Portion

North of the railroad tracks, features observed in 1973 in the probable junkyard have been removed and the facility appears inactive. Just to the east, cleared area CA-3 has expanded in size.

Southern Portion

South of the railroad tracks, and east of the substation near the center of the apartment complex, ground scar GS-4 remains. West of the substation, the probable earth-covered bunker is covered by vegetation. Ground scar GS-2 west of Mary McLead Bethune Elementary School remains unchanged.

Surrounding Study Area

Off site, but within the study area, in the northeast the possible fill process facility remains. Open dumping is visible along Moncrief Creek and near the possible fill process facility. The golf course, last observed in 1973, is no longer active. A commercial facility has been developed in the area. No further environmentally significant change in this area is observed since the previous analysis year.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
- - -	DRAINAGE
←	FLOW
x x x x x	FENCE
= = = =	VEHICLE ACCESS
+ + + +	RAILWAY
⬮	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

17 4 0035

Figure 10. Brown's Dump study area, January 5, 1982. Approximate scale 1:8,675.

17 4 034

JANUARY 22, 1988 (FIGURE 11)

Northern Portion

North of the railroad tracks, cleared area CA-3 observed in 1982 is now overgrown.

Southern Portion

South of the railroad tracks, and east of the substation near the center of the apartment complex, ground scar GS-4 noted in 1982 is overgrown. No change is noted in ground scar GS-2 west of Mary McLead Bethune Elementary School. Just north of ground scar GS-2 is a large graded area along the east side of the berm.

Surrounding Study Area

Offsite, but within the study area to the northeast, the possible fill process facility remains. The open dumping along Moncrief Creek and near the possible fill process facility appears to have expanded; light and dark-toned materials and debris are observed within the open dump. The commercial facility is still present on the eastern side of the study area. Just south of the railroad tracks, and east of Moncrief Road are several mounds of medium-toned (MT) and dark-toned material. West of the site, the possible grain process facility has constructed 11 new possible silos.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
←	DRAINAGE
→	FLOW
x x x x x	FENCE
==	VEHICLE ACCESS
+ + + + +	RAILWAY
⊗	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 11. Brown's Dump study area, January 22, 1988. Approximate scale 1:8,675.

174 0035

NOVEMBER 10, 1997 (FIGURE 12)

The greatest extent of the ash dump (for any year examined in this analysis) and any possible waste disposal area (WDA) is shown on the 1997 photograph overlay (Figure 12).

Northern Portion

No environmentally significant change has occurred since the previous analysis year.

Southern Portion

No environmentally significant change has occurred since the previous analysis year. In the area west of Mary McLead Bethune Elementary School, ground scar GS-2 is smaller in size compared to 1988 and is divided into two separate areas.

Surrounding Study Area

Offsite, but within the study area to the northeast, the possible fill process facility remains. The open dump along Moncrief Creek and near the possible fill process facility has visible light and dark-toned materials present and debris is still observed within the open dump. Bulldozers appear to have moved materials on the open dump and a face is noted on the dump's northwest side. The southern end of the open dump area is outside the actively worked area. South of the railroad tracks and east of Moncrief Road, the mound of medium- and dark-toned material observed in 1988 has been removed. To the east, the commercial facility has expanded since 1988. In the southwest, south of the probable distribution facility, is a cleared area (CA-4) and on either side are several piles of fill (FL-6); the remaining area is residential, and industrial. In the northwest, a large retention pond is present north of the railroad tracks. Drainage appears to flow from the surrounding residential area into this retention pond.



INTERPRETATION CODE

—	SITE BOUNDARY
- - -	STUDY AREA
←	DRAINAGE
→	FLOW
x x x x x	FENCE
==	VEHICLE ACCESS
+	RAILWAY
⬢	MOUNDED MATERIAL (EXTENSIVE)
	BERM/DIKE
B	BUILDING
CA	CLEARED AREA
DG	DISTURBED GROUND
DT	DARK-TONED
ECB	EARTH-COVERED BUNKER
FL	FILL AREA
GS	GROUND SCAR
LT	LIGHT-TONED
M	MATERIAL
MM	MOUNDED MATERIAL
MT	MEDIUM-TONED
NB	NEW BUILDING
RC	RAILCARS
SL	STANDING LIQUID
ST	STAIN
WDA	WASTE DISPOSAL AREA
*	COLLATERAL DATA

Figure 12. Brown's Dump study area, November 10, 1997. Approximate scale 1:9,000.

17 4 0037

GLOSSARY

Access Road - A paved or unpaved route of vehicular access.

Berm/Dike - An embankment of either natural or man-made materials that impounds liquids, solids or other materials, or controls flood waters.

Cleared Area (CA) - An area from which man has removed trees, shrubs, or other natural vegetative cover.

Dark-, Medium-, or Light-Toned - Tones of features in question are compared with the darkest and lightest tones of gray (if using B&W photography) on the print.

Disturbed Ground (DG) - A rough area where the ground surface has been dug up or overturned.

Ditch - A long narrow excavation, as for draining or irrigating land.

Extraction Area - An area where earth or other material is being removed for specific use elsewhere (e.g., quarry, sand and gravel pits, etc.).

Fill (FL) - Earth, stones, or other material that is used to build up the level of an area of ground.

Ground Scar (GS) - An area of bare soil, apparently the result of human activity.

Material - Raw or waste materials on or in the vicinity of the site.

Mounded Material (MM) - Piles of raw or waste materials on or in the vicinity of the site.

Municipal Waste - Residential and commercial solid waste generated within a community.

Open Dump - A site for disposal of solid waste which is not a sanitary landfill within the meaning of Section 4004 of RCRA.

Pit - A steep-sided hole in the ground surface.

Retention Pond - Basin constructed out of earthen materials used to temporarily store stormwater runoff.

Stain (ST) - A residue or discoloration resulting from a spill, discharge, or removed/dispersed materials.

Standing Liquid (SL) - A small, shallow, temporary collection of liquid, not necessarily waste. Not to include liquid contained in impoundments, trenches, pits, etc.

Waste Disposal Area (WDA) - An area where waste materials are discarded.

REFERENCES

MAPS

Source ^a	Figure	Name	Scale	Date
USGS	1	United States	1:2,500,000	1972
USGS	2	Jacksonville, FL	1:24,000	1994
USGS	2	Trout River, FL	1:24,000	1992

COLLATERAL INFORMATION

EPA. 1999. Collateral information provided by Region 4, Remote Sensing Services Request Form.

LESAT (Lockheed Environmental Systems & Technologies Co.). 1999. Master Quality Assurance Project Plan. Prepared for EPA Environmental Sciences Division. Contract 68-C5-0065. Las Vegas, Nevada.

AERIAL PHOTOGRAPHS

Photo source ^a	Figure	Date of acquisition	Original scale	Film type ^b	Mission I.D.	Source frame #
EPIC	3	06-06-43	1:20,000	B&W	DCW-2C	202,203
NAS	4	03-29-45	1:21,000	B&W	3501BU	143,144
EPA	5	01-03-52	1:20,000	B&W	-	17,18
EPA	6	11-09-56	1:40:000	B&W	-	4784,4785
ASCS	7	11-03-60	1:20:000	B&W	DCW-3AA	175,176
EPA	8	01-23-66	1:24,000	CC	-	1766,1767
FLDOT	9	01-16-73	1:24,000	B&W	PD1230	14,15
EPA	10	01-05-82	1:24,000	B&W	PD2747	14,15
EPA	11	01-22-88	1:24,000	B&W	PD5734	14,15
FLDOT	12	11-10-97	1:23,000	B&W	PD4544	13,14

^aASCS U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, Salt Lake City, Utah
 EPA U.S. Environmental Protection Agency, Environmental Sciences Division, Las Vegas, Nevada
 FLDOT Florida Department of Transportation, Tallahassee, Florida
 NAS National Air Survey, Bladensburg, Maryland
 USGS U.S. Department of Interior, U.S. Geological Survey, Washington, D.C.
^bB&W Black-and-white
 CC Conventional Color